Zion Landfill

Zion, Illinois

Surface Emissions Monitoring

3rd Quarter 2015 Report

Prepared By:

American Environmental Group
3600 Brecksville Road
Richfield, Ohio 44286
(330) 659-5930

September 11, 2015

Advanced Disposal
Zion Landfill
Jim Lewis
701 Green Bay Road
Zion, IL 60099

RE: Advanced Disposal Zion Landfill – 2nd Quarter 2015 NSPS Surface Scan

Dear Mr. Lewis,

American Environmental Group (AEG) prepared the enclosed report documenting the results of the 3rd Quarter 2015 NSPS surface scan at Advanced Disposal Zion Landfill. The initial monitoring event was performed on July 31, 2015. We noted no (0) exceedances of the 500 parts per million methane by volume (ppm) standard at the facility during the initial scan event.

In summary, the site met the NSPS standards for surface emissions for the 3rd Quarter 2015 Surface Scan event, and no further action is required. Field monitoring forms are attached for your files.

Weather Conditions
Weather conditions recorded during the monitoring events were as follows:

July 31, 2015:
- Temperature approximately 73° Fahrenheit
- Relative humidity of 53 percent
- Barometric pressure of 29.94"Hg
- Wind West northwest at about 6 mph
- Clear skies

In accordance with NSPS regulations, these monitoring events were performed during typical meteorological conditions.

The survey was conducted in accordance with the regulations set forth in the New Source Performance Standard (NSPS), 40 CFR 60.755 (c) and (d); (2) 40 CFR 60, 40 CFR 60.753(d) - Surface Scan Requirements, Appendix A – Method 21. A Photovac (MicroFID) was used to perform the emissions monitoring. During the event, attention was given to monitoring unusual cover conditions (stressed vegetation, cracks, seeps, etc.) and areas with unusual odors. The MicroFID was calibrated at the beginning of each day, prior to performing the monitoring, in accordance with Method 21 compliance requirements. Calibration logs were completed by the field technician performing the work, and are included in Attachment A. During the monitoring event, AEG observed that the ground surface appeared to be in good condition overall and there were no unusual odors noted. Results are presented in the attached forms.

Please call Dave Ovanek at (815) 671-0203 if you have any questions.

Sincerely,

Pam Nyiri

Pam Nyiri
Environmental Data Coordinator III
American Environmental Group, Ltd.

On Behalf of
Dave Ovanek
Project Manager
American Environmental Group, Ltd.

Attachments: Surface Emissions Monitoring Calibration Logs
Surface Emissions Monitoring Log
Surface Emissions Monitoring Topographic Map with Monitoring Route

Cc: Jim Hitzeroth, Republic Services, Inc – Electronic

Zion Landfill

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Surface Emissions Monitoring
Calibration Logs

CALIBRATION PRECISION TEST RECORD

Initial Event: July 31, 2015

LANDFILL NAME: Zion Landfill-ADS **EVENT:** 3rd Quarter 2015 SEM

INSTRUMENT MAKE: Photovac **MODEL:** MicroFID **SERIAL #:** CZHJ319

PERFORMED BY: TroyVoyles **TIME:** 930am **DATE:** July 31, 2015

Calibration Gas Standard: 500ppm CH4

MEASUREMENT # 1:

Meter Reading for Zero Air: 1.0 **ppm (1)**

Meter Reading for Calibration Gas: 501.0 **ppm (2)**

MEASUREMENT # 2:

Meter Reading for Zero Air: 1.0 **ppm (3)**

Meter Reading for Calibration Gas: 502.0 **ppm (4)**

MEASUREMENT # 3:

Meter Reading for Zero Air: 1.0 **ppm (5)**

Meter Reading for Calibration Gas: 501.0 **ppm (6)**

CALCULATE PRECISION:
Must be less than 10%

$$\frac{|500 - (2)| + |500 - (4)| + |500 - (6)|}{3} \times \frac{1}{500} \times \frac{100}{1}$$

= 0.267%

INSTRUMENT RESPONSE TIME TEST RECORD

Initial Event: July 31, 2015

LANDFILL NAME: Zion Landfill-ADS **EVENT:** 3rd Quarter 2015 SEM

INSTRUMENT MAKE: Photovac **MODEL:** MicroFID **SERIAL #:** CZHJ319

PERFORMED BY: TroyVoyles **TIME:** 938am **DATE:** July 31, 2015

MEASUREMENT # 1:

Stabilized Reading Using Calibration Gas: 507.0 **ppm**

90% of the Stabilized Reading: 456.3 **ppm**

Time to Reach 90% of Stabilized reading after switching from Zero Air to Calibration Gas: **5.0** **seconds (1)**

MEASUREMENT # 2:

Stabilized Reading Using Calibration Gas: 503.0 **ppm**

90% of the Stabilized Reading: 452.7 **ppm**

Time to Reach 90% of Stabilized reading after switching from Zero Air to Calibration Gas: **6.0** **seconds (2)**

MEASUREMENT # 3:

Stabilized Reading Using Calibration Gas: 504.0 **ppm**

90% of the Stabilized Reading: 453.6 **ppm**

Time to Reach 90% of Stabilized reading after switching from Zero Air to Calibration Gas: **6.0** **seconds (3)**

CALCULATE RESPONSE TIME:

Must be less than 30 seconds

$$\frac{(1) + (2) + (3)}{3} = 5.667 \text{ seconds}$$

CALIBRATION PROCEDURE & BACKGROUND DETERMINATION REPORT

Initial Event: July 31, 2015

LANDFILL NAME: Zion Landfill-ADS **EVENT:** 3rd Quarter 2015 SEM

INSTRUMENT MAKE: Photovac **MODEL:** MicroFID **SERIAL #:** CZHJ319

PERFORMED BY: TroyVoyles **TIME:** 945am **DATE:** July 31, 2015

CALIBRATION PROCEDURE

1. **Allow instrument to internally zero itself while introducing zero air.**

2. **Introduce the calibration gas into the probe.**

   Stable Reading = 501.0

3. **Adjust meter to read 500 ppm.**

BACKGROUND DETERMINATION PROCEDURE

1. **Upwind Reading (highest in 30 seconds):**

Location: GMP05 2.1 **ppm (1)**

2. **Downwind Reading (highest in 30 seconds):**

Location: GMP16 1.5 **ppm (2)**

CALCULATE BACKGROUND VALUE

$$\frac{(1) + (2)}{2} = 1.8 \text{ ppm}$$

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Surface Emissions Monitoring Logs

Individual Monitoring Exceedance
Surface Monitoring Design Plan

Use this form to record an individual monitoring exceedance and follow-up monitoring activities.
This form is only used when a reading of 500 ppm above background is encountered during the surface monitoring.
Use a separate form for each initial exceedance.

Initial Monitoring Exceedance: #1 No Exceedances

Date: _____ Time: _____ am/pm Monitoring Technician Initials: _____
Instrument reading - Background reading: _____ ppm - _____ ppm = _____ ppm

Location of monitored exceedance (include description of field marker used): _____

Describe cover maintenance or adjustments to the vacuum of adjacent wells to increase gas collection in vicinity of measured exceedance before remonitoring in 10 days: _____

Remonitor location within 10 calendar days of initial exceedance:

Date: _____ Time: _____ am/pm Monitoring Technician Initials: _____
Instrument reading - Background reading: _____ ppm - _____ ppm = _____ ppm

If 10 day remonitoring shows an exceedance, describe additional corrective action taken before remonitoring again within 10 days: _____

If the 10 day remonitoring is <500 ppm, remonitor ***1 month*** from initial exceedance:
Date: _____ Time: _____ am/pm Monitoring Technician Initials: _____
Instrument reading - Background reading: _____ ppm - _____ ppm = _____ ppm

If the 1 month remonitoring is <500 ppm, resume normal quarterly monitoring.
If the 1 month remonitoring shows an exceedance, describe additional corrective action taken before remonitoring again within 10 days: _____

Remonitor location within 10 calendar days of 2nd exceedance:

Date: _____ Time: _____ am/pm Monitoring Technician Initials: _____
Instrument reading - Background reading: _____ ppm - _____ ppm = _____ ppm

If the 10 day remonitoring is <500 ppm, remonitor 1 month from initial exceedance:
Date: _____ Time: _____ am/pm Monitoring Technician Initials: _____
Instrument reading - Background reading: _____ ppm - _____ ppm = _____ ppm

If the 1 month remonitoring is <500 ppm, resume normal quarterly monitoring.
If the 1 month remonitoring shows an exceedance, describe additional corrective action taken before remonitoring again within 10 days: _____

(use additional forms if necessary)*

*If monitoring shows 3 exceedances within a quarterly period a new well or other collection device must be installed within 120 days of initial exceedance or alternative remedies/timelines may be submitted to the Administrator for approval. Further monitoring is not necessary until the remedy is completed. The 3 exceedances do **not** have to be consecutive.

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Surface Emissions Monitoring
Topographic map with monitoring route

Zion Landfill 3rd Qtr 2015 SEM
Technician: Troy Voyles
7/31/15
No exceedances